

## MEMORANDUM

To: WMCT  
From: Spreck Rosekrans  
Date: November 8, 1999  
Re: Model Comparison (DWRSIM and Daily Ops)

Below is my (unsolicited) summary of today's model comparison meeting. Attending were Russ Brown, George Barnes, Paul Sandhu, Sean, Sushil Tom Cannon and I.

We spent most of our time looking at 1981. We compared DWRSIM run 3 (WQCP + VAMP flows) with the Daily Ops Model base (historic inflows, modified by upstream AFRP flows, and the WQCP). The Daily Ops run was the basis for gaming. The differences in results are due to differences in the following:

1. Initial storage conditions, both upstream and in San Luis Reservoir
2. Flood Control diagrams (DWRSIM's are more detailed and change each year. The Daily Ops model interpolates between monthly endpoints and accounts for the timing of storms.)
3. Delta demand (including Contra Costa, Delta CU, Vallejo and the North Bay Aqueduct)
4. Upstream depletions
5. Joint Point of Diversion (always on in Daily Ops)
6. Upstream AFRP flows (in Daily Ops model, not in DWRSIM run 3)
7. Daily handling of E/I ratio
8. Daily handling of X2 (including credit for meeting target in previous month)

We recognized the differences and agreed that each model offered some things that the other did not. We also decided that it would be better to "game off" of DWRSIM than historic inflows.

We recommended using DWRSIM run 4 as input to the Daily Ops model. In doing so, the Daily Ops model uses DWRSIM data for Delta inflow as well as items 1 and 2 above. Russ will also use DWRSIM results for the "demands" under item 3. Since DWRSIM run 4 incorporates upstream AFRP and Joint Point of Diversion, the models' treatment of items 5&6 should also be the same. I am unsure whether item 4 will be a factor.

The remaining model differences should be generally limited to 7 and 8, where the Daily Ops model has some clear advantages. It will be necessary, however, that each year be modeled one at a time, and that increases or decreases (compared to the DWRSIM) to carryover storage will not affect the next year. The gaming will simply note the storage difference at the end of the year but reset the model storages to the DWRSIM levels.

Russ will adjust historic patterns for Delta inflows to meet monthly DWRSIM values by using one of three different algorithms, depending on modeling judgement. They are:

1. Adding/subtracting a constant to/from each daily value.

2. Adding/subtracting a percent change to/from each daily value.

3. Adding/subtracting to meet a constant monthly value.

#2 is likely to be most useful when we are trying to match storm peaks. #3 is likely to be most useful when trying to move water for export.